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# (12) UK Patent Application (19) GB (11) 2 309 389 (13) A

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(71) Applicant(s)

Ian Peter Bate  
6 Highfield Street, Sutton, St HELENS, WA9 3PA,  
United Kingdom

Ian Peter Bate  
101 Barrington Road, Wavertree, LIVERPOOL,  
L15 3HR, United Kingdom

(72) Inventor(s)

Ian Peter Bate  
Ian Peter Bate

(74) Agent and/or Address for Service

Ian Peter Bate  
6 Highfield Street, Sutton, St HELENS, WA9 3PA,  
United Kingdom

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US 5029660 A US 5024438 A US 4491323 A  
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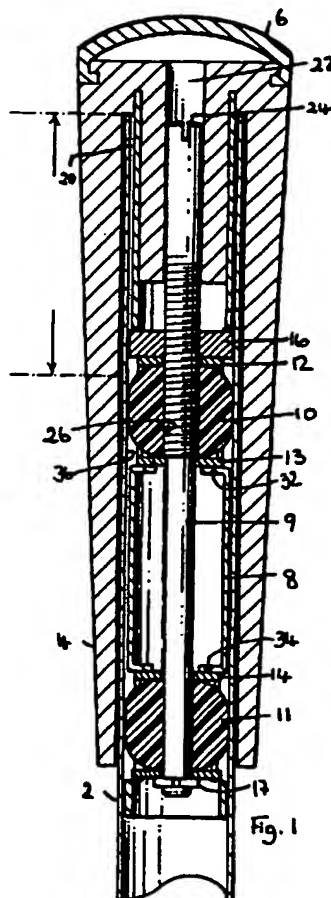
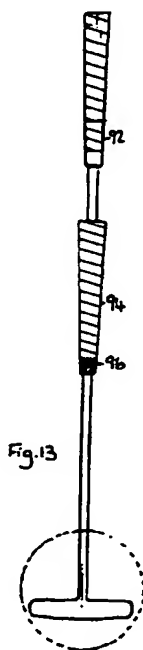
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INT CL<sup>5</sup> A63B 53/00 53/12 53/14 53/16

## (54) Putters

(57) A putter comprises a head, a shaft and a grip 94. The top of that shaft is open and can incorporate a further shaft and grip 92 to convert a putter into a broomhandle putter.

Also disclosed are means of clamping telescopic putter shafts which include rubber wedges 10 which can be tightened by a screw 24. (Figure 1)



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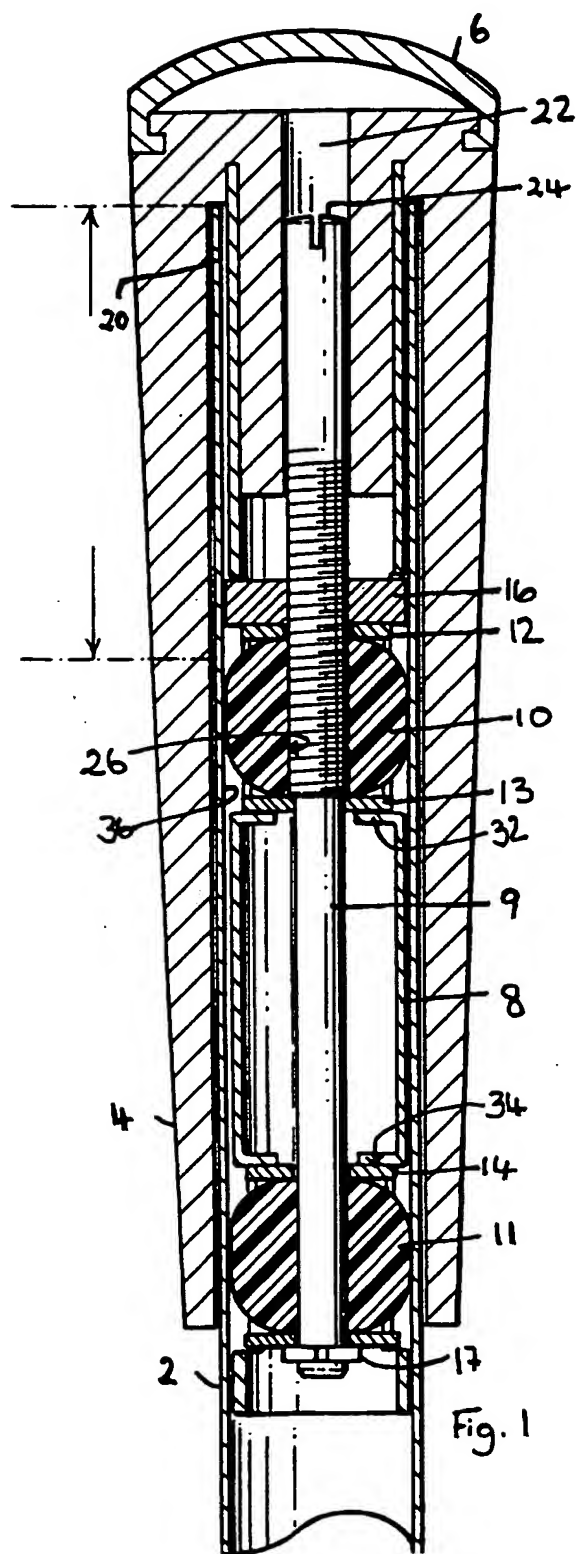


Fig. 1

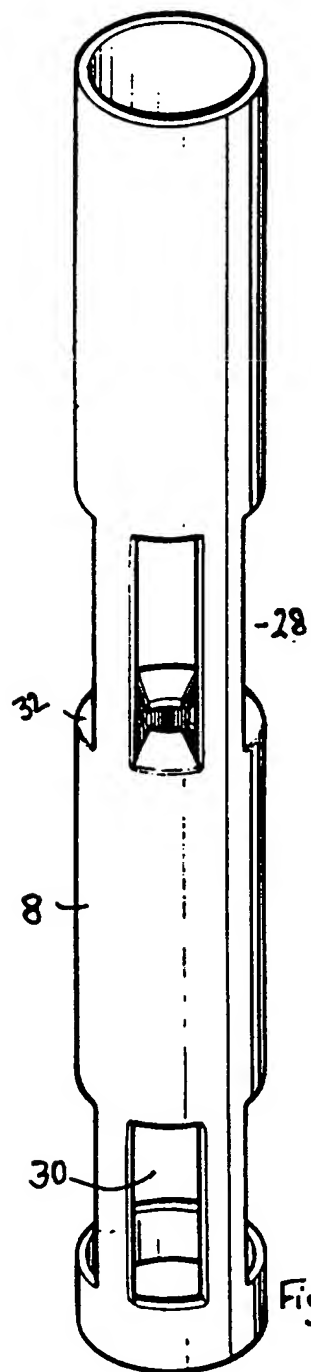


Fig. 2

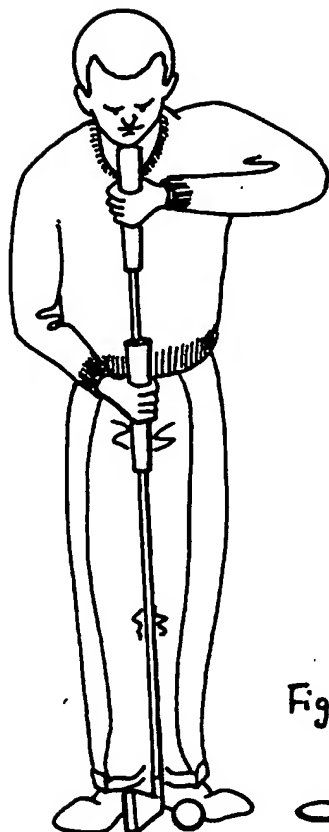


Fig. 3



Fig. 5

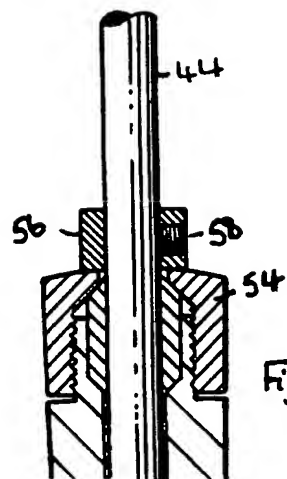
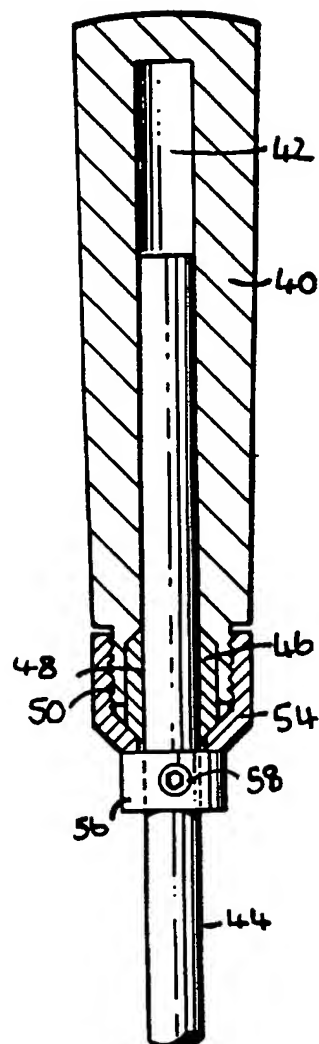
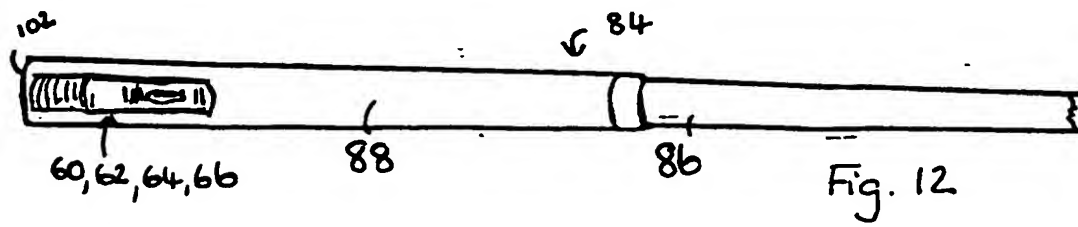
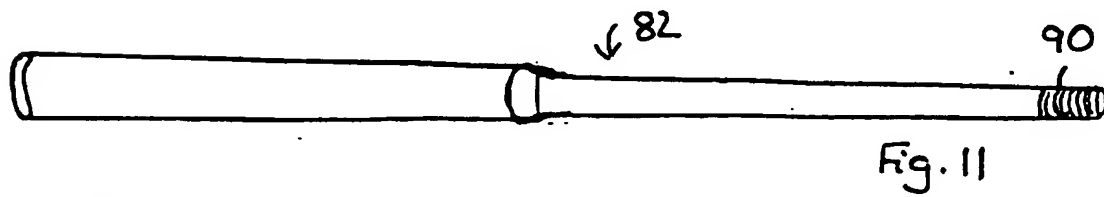
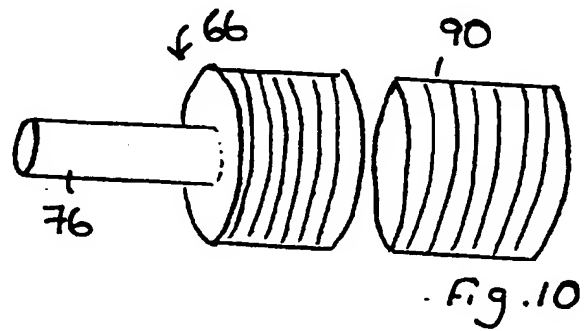
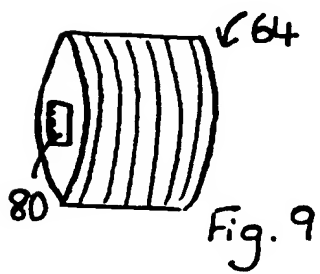
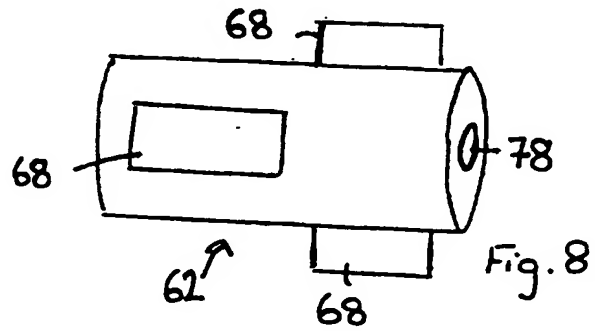
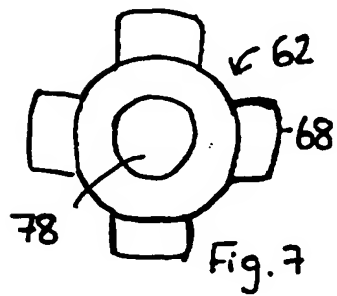
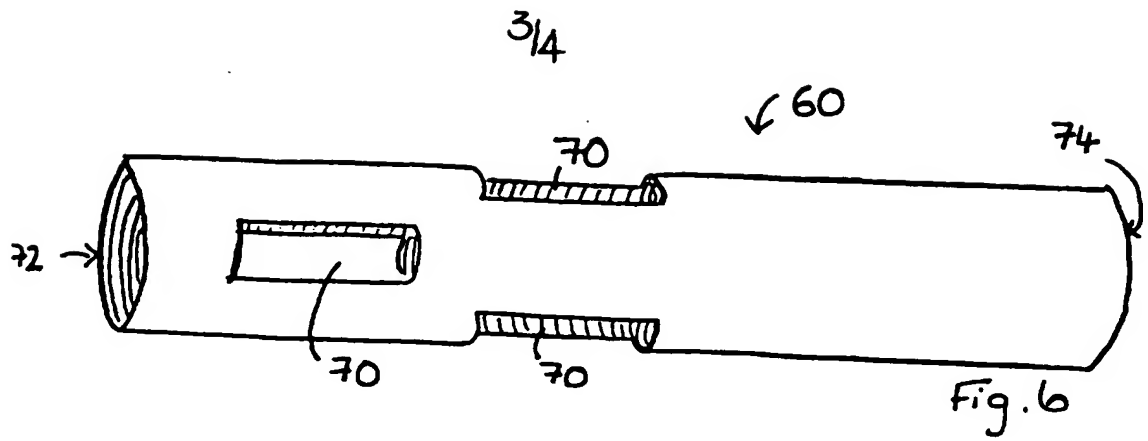
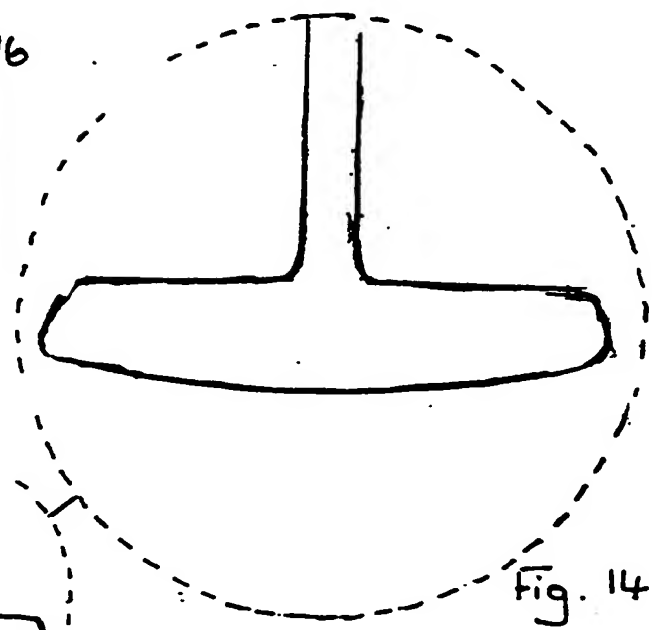
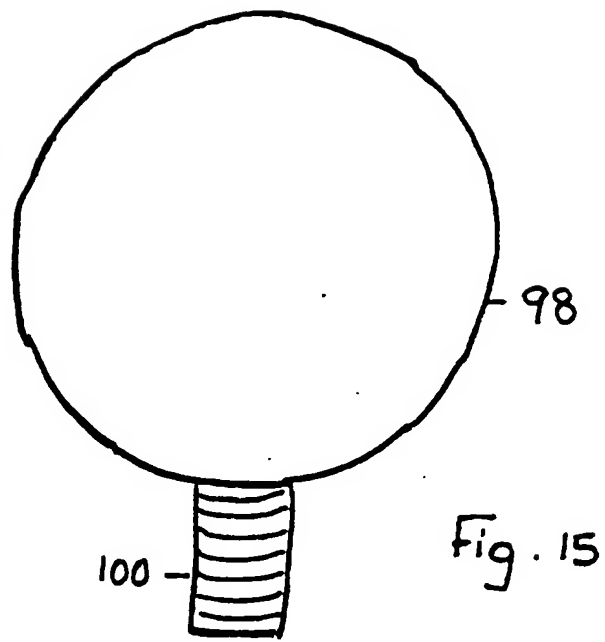
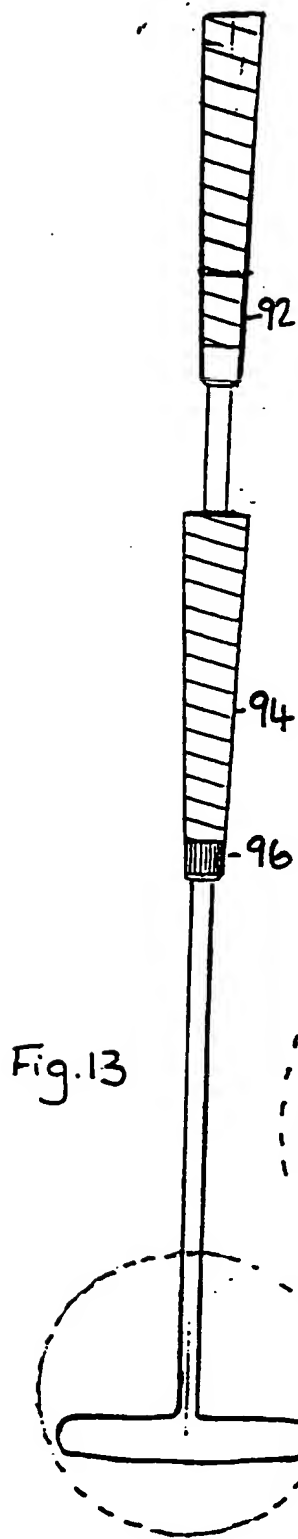


Fig. 4





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DESCRIPTION  
GOLF CLUBS

The present invention relates to golf clubs.

Ideally a set of golf clubs comprising woods, irons and putters, consists of clubs graduated in length, weight and shaft stiffness to make all clubs feel the same when swung. This has the advantage that the golfer is able to stroke the ball uniformly with each club and does not have to vary his swing for variations in club design. For best results, a player should be measured for his set of clubs, so that he gets implements of the weight, length, lie and suppleness best suited to his strength, build and swing characteristics.

Obtaining a set of clubs specifically matched to a player can be extremely expensive and most golf suppliers usually adjust the length of a standard set of clubs in order to match the height of a player. This is normally achieved by removing the grip and adjusting the length of the shaft, either by removing an end portion of the shaft located remotely from the head and thereby shortening the club, or by adding an extension to the shaft by force-fitting an additional length of shaft to said end portion of the shaft in order to lengthen the club. A new grip is then fitted

to the club. This has the disadvantage that the club must be adjusted by a skilled tradesman and also adjusting the club length in this fashion alters the balance of the club, which will affect the stroke of the club and therefore its playing performance.

It is generally expensive to modify the length of a set of clubs and this can be particularly disadvantageous when a set of clubs is purchased for a young player, since the clubs must be frequently adjusted in length as the player grows in stature.

A specific type of club known as a broomstick putter (the use of a broomstick putter is illustrated in Fig. 3), is designed to have a larger length than a standard iron. Broomstick putters generally have two grips in order to allow a greater control of the swing by the user. The disadvantage of such broomstick putters is that their extra length makes them difficult to transport since they protrude from a standard golf bag and can therefore be easily damaged. Furthermore, despite the popularity of such putters it is difficult to obtain a broomstick putter of the correct length.

It is an object of the present invention to overcome or alleviate the above described drawbacks.

In accordance with the present invention there is provided a golf club having an integral adjusting



mechanism for adjusting the length of the golf club to a desired value.

This has the advantage that by providing an adjusting mechanism within the structure of the club the overall weight of the club is not altered when the length of the shaft of the club is increased or decreased. Furthermore, the length of the club can be adjusted by the user without the need to remove or add portions to the shaft.

Preferably, the adjusting mechanism is provided between a grip and shaft of the club and allows relative movement between the grip and the shaft.

This has the advantage that the adjusting mechanism can largely be contained within the grip of the club and therefore will be less obtrusive.

Preferably, the adjusting mechanism comprises a sleeve which is attachable to the grip and which is slidably received within or about the shaft, the sleeve having means for selectively preventing relative movement between the grip and shaft.

Preferably, the adjusting mechanism is slidably received within the shaft and has means for selectively preventing its relative movement within the shaft.

Preferably, the means for selectively preventing said relative movement is at least one resilient

member and a member for applying a compression force on the at least one resilient member.

Preferably, the at least one resilient member is a rubber ball and the member for applying the compression force is a screw spindle which extends through the sleeve.

Preferably, the adjusting mechanism comprises a slotted sleeve and the resilient member is an insert in the sleeve. Preferably, the sleeve is internally threaded and the member for applying the compression force is at least one threaded plug which is adapted to be screwed into the sleeve.

Preferably, the at least one resilient member is a circlip.

Preferably, the shaft of the club comprises two separable sections. Preferably one of the sections of the shaft has a male connector and the other a female connector to allow the joining of the two shaft sections.

Preferably, the male connector is provided on an end section of one shaft section and the female connector is the internally threaded sleeve.

In a preferred embodiment the golf club is provided with an additional piece which is adapted to fit to the end section of the grip remote from the club's head.

Preferably, the additional piece comprises a sphere having a spigot which is adapted to extend into the grip of a club, the interior of the grip of the shaft of the club being provided with a complementary mounting means.

Preferably, the complementary mounting means is provided by the adjusting mechanism.

Preferably, the spigot is a screw, bayonet or push-fit connection.

In a further preferred embodiment, the head of the club is substantially T-shaped. This has the advantage that the club is suitable for both right and left handed players.

By way of example only specific embodiments of the invention will now be described with reference to the accompanying drawings, in which:-

Fig. 1 is a cross-sectional view of a grip and shaft of a golf club, constructed in accordance with one embodiment of the present invention;

Fig. 2 is a perspective view of the sleeve of the adjusting mechanism of Fig. 1;

Fig. 3 is a schematic view illustrating the use of a broomstick putter;

Fig. 4 is a cross-sectional view of the grips and shaft of a broomstick putter constructed in accordance with a second embodiment of the present invention;

Fig. 5 is a perspective view of a circlip used in the embodiment of Fig. 4;

Figs. 6 to 10 are schematic views of an adjusting mechanism constructed in accordance with a third embodiment of the present invention;

Figs. 11 and 12 illustrate the use of the adjusting mechanism of Figs. 6 to 10 in a broomstick putter;

Fig. 13 is a schematic view of a broomstick putter constructed in accordance with a fourth embodiment;

Fig. 14 is an enlarged view of the head of the broomstick putter of Fig. 13 constructed in accordance with a fifth embodiment; and

Fig. 15 is a schematic view of a putting aid.

Referring to Fig. 1, the club comprises a shaft 2, a grip 4, a cap 6 and an adjusting mechanism, the adjusting mechanism being provided with a sleeve 8 (as best illustrated in Fig. 2), a screw spindle 9, two resilient balls 10,11, four thrust washers 12,13,14,15 and two nuts 16,17.

The grip 4 is provided about the exterior of the end 20 of the shaft 2 which is remote from the head (not illustrated) of the club. The internal bore of the grip 4 has a portion of reduced bore 22 which is threaded and receives the slotted end 24 of the screw

spindle 9. The screw spindle 9 extends concentric to the sleeve 8 and is retained by the nuts 16,17 in the sleeve. The sleeve 8 is slidably mounted within the shaft 2.

Each ball 10,11 has a through bore 26 by which it is mounted on the screw spindle 9. Each ball 10,11 is retained by a respective pair of the thrust washers 12,13 and 14,15 within the sleeve and is situated adjacent a respective slot 28,30 of the sleeve 8. The thrust washers 13 and 14 are mounted on a respective inwardly directed collar 32,34 of the sleeve, whilst each thrust washer 12,15 is provided adjacent a respective nut 16,17 each of which is threaded on the screw spindle 9, such that when the length of the screw spindle 9 is shortened between the two nuts 16,17, by tightening the screw spindle 9, each ball 10,11 is compressed between its respective thrust washers 12,13 14,15 such that the ball is forced to extend through the respective slots 28,30 in the sleeve and grip the internal bore 36 of the shaft 2. This fixes the sleeve 8 within the shaft 2.

The length of the shaft 2 is adjusted as follows:

The cap 6 is removed and the blade of a screw driver (not illustrated) is inserted into the slotted end 24 of the screw spindle 9. The screw spindle 9 is turned in order to increase the length of its shaft

between the two nuts 16,17, thereby decreasing the compression force on the balls such that they release their grip on the shaft 2.

The sleeve 8 is attached to the grip 4 via the threaded mounting of screw spindle 9 in the portion of reduced bore 22 of the grip 4. The shaft 2 can then be adjusted to the desired length by moving the grip 4 along the shaft 2. Once the desired length of club is reached the screw spindle 9 is tightened in order to once again compress the balls such that they once again grip the interior of the shaft 2 and prevent further relative movement between the grip 4 and shaft 2. The cap 6 is then replaced.

In the foregoing embodiments the adjusting mechanism of the club has been described with reference to two resilient balls. However, the adjustment could be achieved with a different number of balls. Furthermore, the ball or balls could be made of rubber and need not necessarily be spherical.

The second embodiment of the invention is described with respect to the adjustment of the length of a broomstick putter. However, it should be understood that the above described mechanism for adjusting the length of a club could be used for adjusting the length of a broomstick putter, whilst the mechanism described hereinunder could be adapted

for use in adjusting the length of a more conventional club.

Referring to Fig. 4 each grip 40 has a bore 42 in which the shaft 44 of the putter is slidably mounted, each grip having a blind bore 48 in which a circlip 46 (as best illustrated in Fig. 5) is provided about the shaft 44. The blind bore 48 is provided in a region of reduced diameter of the grip 40, the exterior surface of which region is provided with a threaded surface 50. A sleeve 52 having a threaded surface 54 corresponding to the surface 50 is threaded on said region of reduced diameter. The sleeve 52 can be fixed to the shaft 44 by a fastening 56 having a key slot 58 for an Allen key (Trade Mark).

The length of the broomstick putter is adjusted as follows:

The fastening 56 is loosened by engaging an Allen Key (not illustrated) in the slot 58. This releases the sleeve 54 such that it can be unscrewed from the grip 40. This reduces the compression force of the circlip 46 and therefore allows relative movement between the shaft 44 and grip 40. Once a desired length of the putter is achieved the sleeve 54 is once again screwed on to the grip 40 and the circlip is once again compressed between the grip 40 and shaft 44 preventing relative movement therebetween. The sleeve

54 is fixed once again in position by tightening the fastening 58.

The broomstick putter has been described with reference to each grip having a mechanism for adjusting the length of the shaft. However, only one such mechanism could be provided in one of the grips.

In the embodiment of the invention illustrated in Figs. 6 to 10, the adjusting mechanism comprises an internally threaded sleeve 60 (as best illustrated in Fig. 6) which is adapted to be slidably mounted within the shaft of a club, a resilient annular insert 62 having four wings 68 (as best illustrated in Figs. 7 and 8), a threaded socket 64 having a through-bore 78 (see Fig. 9) and a threaded plug 66 having a spigot 76 (see Fig. 10).

The adjusting mechanism is assembled as follows:

The insert 2 is press-fitted into the sleeve 60 such that a respective wing 68 is aligned with a respective slot 70 provided in the sleeve 60. The socket 64 is then screwed into end 72 of the sleeve 60, and the plug 66 is screwed into the end 74 of the sleeve 60 such that the spigot 76 extends through the bore 78 of the annular insert 62 and the through-bore 80 of the socket 64. The socket and plug 64,66 thereby retain the insert 62 in position. The sleeve 60 is then placed in the shaft of a club (not



illustrated) and by further tightening of the plug 66 and socket 64 combination the insert 62 is compressed therebetween such that each wing 68 extends through its respective slot 70 in the sleeve 60 and contacts the interior of the shaft of the club, such that the sleeve 60 is fixed in position in the shaft of the club. The club can be completed by providing a grip about the exterior of the shaft of the club.

The length of the club can be increased as follows:

The cap of the grip is removed to allow access to the plug 66 within the sleeve 60 in the shaft of the club. By loosening the socket 64 and plug 66 combination the compressive force on the insert 62 is released and the wings 68 release their grip of the interior of the shaft thereby allowing the sleeve 60 to move within the shaft. The sleeve 60 is slid along the shaft such that its end 74 extends out of the shaft. The plug and socket combination is once again tightened such that the wings 68 once again grip the inside to the shaft and fix the sleeve in position. The grip on the shaft of the club is then slid along the shaft in order to cover the end 74 of the sleeve 60 protruding from the shaft. The cap is then replaced.

The plug 66 and socket 64 can be provided with

slotted ends to allow adjustment by a screw driver, or key slots to allow adjustment by an Allen key (Trade Mark) or the like.

One use of the adjusting mechanism of Figs. 6 to 10 is illustrated in Figs. 11 and 12 whereby the adjusting mechanism allows a broomstick putter to be dismantled into two sections 82,84 in order to allow easier transportation. In this embodiment the adjusting mechanism 60,62,63,64 is provided in a shaft 86 and within a grip 88 of one section 84 of the broomstick putter. The end 90 of the other section 82 is provided with a screw thread which in use is adapted to be screwed into the end 74 of the sleeve 60 towards the plug 66 in order to complete the broomstick putter. The broomstick putter is dismantled simply by unscrewing the section 82 from its mounting in the sleeve 60 within the grip 88 of the section 84. This has the advantage that once the length of the putter has been adjusted to the correct length, when the putter is reassembled it is always at the required length for the user.

The shaft of the putter could alternatively be provided in two sections and a circlip provided in the end region of one of the sections which circlip is slidably mounted to fix the movement of the shaft section into the grip to a predetermined position.

The adjusting mechanism has been described with respect to allowing relative movement between the shaft and the grip or grips. However, the shaft could be such that it is provided with telescopic sections which telescope to adjust the length of the shaft. In the embodiment of Fig. 13 a broomstick putter is illustrated having such telescopic sections 92,94. Means 96 is provided to lock the shaft at the desired length. By releasing the locking means 96 the two sections 92,94 can be telescoped to adjust the shaft to the required length. The locking means 96 comprising a locking nut and circlip (not illustrated).

The embodiment of Fig. 14 illustrates a modified head 104 of a club which is suitable for both right and left handed players. Use of this head on a broomstick putter is illustrated in Fig. 13.

Referring to Fig. 15, the club additionally comprises a grip or protection piece 98 comprising a substantially spherical head 99 and a mounting spigot 100. The head 99 is similar in size to a golf ball whilst the spigot is adapted to be fitted into the end of a shaft or grip of a club. The mounting spigot 100 for this purpose could be a screw, bayonet or a push connection which is adapted to fit in a corresponding recess formed in the end 102 of the club.

In a broomstick putter formed from two separable shaft sections 82,84 as hereinbefore described (see for example Figs. 11 and 12) the piece 98 is used to protect the end 102 of the shaft section 84 (see Fig. 12) once the shaft sections have been separated. In use the shaft section 84 could be shorter than a standard club length and therefore when stored in a golf bag will not protrude from the bag to the same degree of the other clubs making this separated section of the putter difficult to locate amongst the other clubs. Also, the end 102 and the adjusting mechanism 60,62,64,66 therein are more susceptible to damage. By fitting the spigot 100 of the piece 98 into the end 74 of the sleeve 60 the effective length of the shaft section 84 is increased by the diameter of the head 99. This has the advantage that the shaft section 84 is of a more comparable length to the other clubs in the bag and can be more easily identified. Furthermore, the piece 98 acts as a protection piece reducing the incidence of damage to the shaft and the adjusting mechanism. The spigot 100 could be adapted to screw into the end 74 of the sleeve 60. Alternatively, the piece 98 could be adapted to fit into the end section of the shaft after removal of the adjusting mechanism. The piece 98 has the additional advantage that the shaft section 84 of the

putter could be used independently of the section 82. The piece 98 acts as an extension to the shaft thereby allowing the shaft section 84 to be used as a conventional putter.

The piece 98 could be used to protect the end of a club, other than a broomstick putter on removal of the adjusting mechanism and/or effectively increase the length of the shaft of the club.

The piece 98 could be used as an aid and allows the club to be suspended by the fingers of a user and thereby allow a more even stroke. The piece 98 could carry advertising material and thereby be used as a promotional aid. The piece 98 has been described as being spherical but could be of any other shape.

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**CLAIMS**

1. A broomstick or broomhandle putter including a head connected to a shaft with two grips around the shaft
2. A putter as in claim 1 where the grips are fitted one above the other
3. A putter as claimed in claim 1 or claim 2 where the top shaft and grip can be detached from the bottom shaft and grip
4. A putter as claimed in 3 where the putter becomes a standard sized putter



Application No: GB 9601643.1  
Claims searched: 1 to 4

Examiner: Alan Blunt  
Date of search: 17 January 1997

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A6D (D21C)

Int Cl (Ed.6): A63B 53/00, 53/12, 53/14, 53/16

Other:

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X,Y	US5029860 (EHRICH) - whole document	X,Y:1, 2
X,Y	US5024438 (CANDOW) - whole document	X, Y:1 to 4
Y	US4491323 (KOZUB) - handle 26	Y 1 to 4
Y	US3663019 (PALOTSEE) - wedge lock (Figure 5)	Y 1 to 4
Y	US3539185 (ANDIS) - Figures 2 and 5	Y 1 to 4

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